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C O P I E S
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T W O L E T T E R S

FROM

JOHN ELLIS, Esq; F. R. S. K

I. To Dr. LINNÆUS, F. R. S, &c.

II. To Mr. WILLIAM AITON, Botanic
Gardener to her Royal Highness the Princess
Dowager of WALES, at Kew.

Read before the ROYAL SOCIETY, December 13 and 20, 1770.

L O N D O N,

Printed by W. BOWYER and J. NICHOLS.

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A Copy of a Letter from John Ellis, Esq; F. R. S. to Dr. Linnæus, F. R. S. &c. with the Figure and Characters of that elegant American Evergreen-tree, called by the Gardiners the Loblolly-Bay, taken from Blossoms blown near London, and shewing that it is not an Hibiscus, as Mr. Miller calls it; nor an Hypericum, as Dr. Linnæus supposes it; but an intire new Genus, to which Mr. Ellis gives the Name of Gordonia.

DEAR SIR,

YOU are no stranger to the frequent errors that arise in botany, by taking the characters of new genera from specimens of dried plants; at the same time it is well known to be an established rule with you to alter or amend any thing of this kind, as soon as it appears clear to you from better evidence. This is the reason that I address you with more freedom in the present botanical cause, in which you are concerned.

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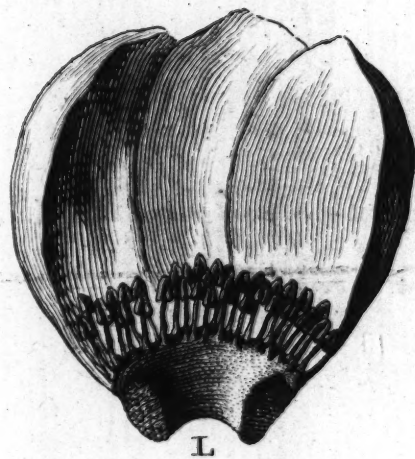
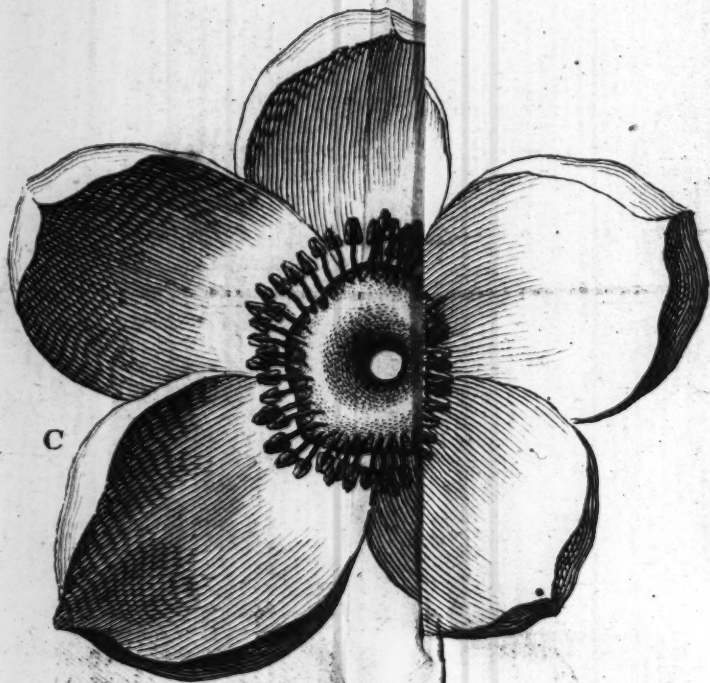
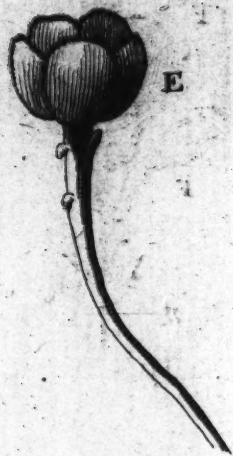
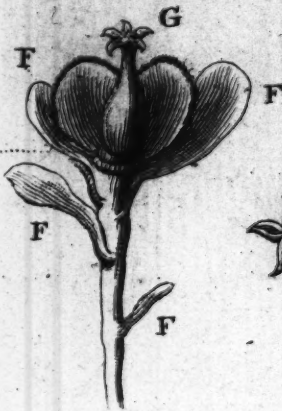
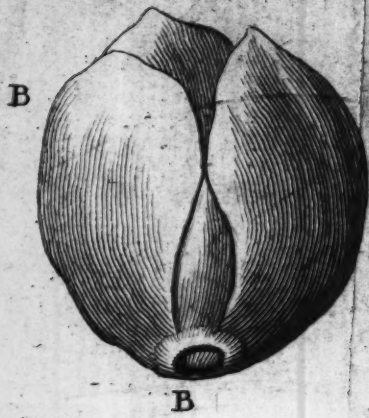
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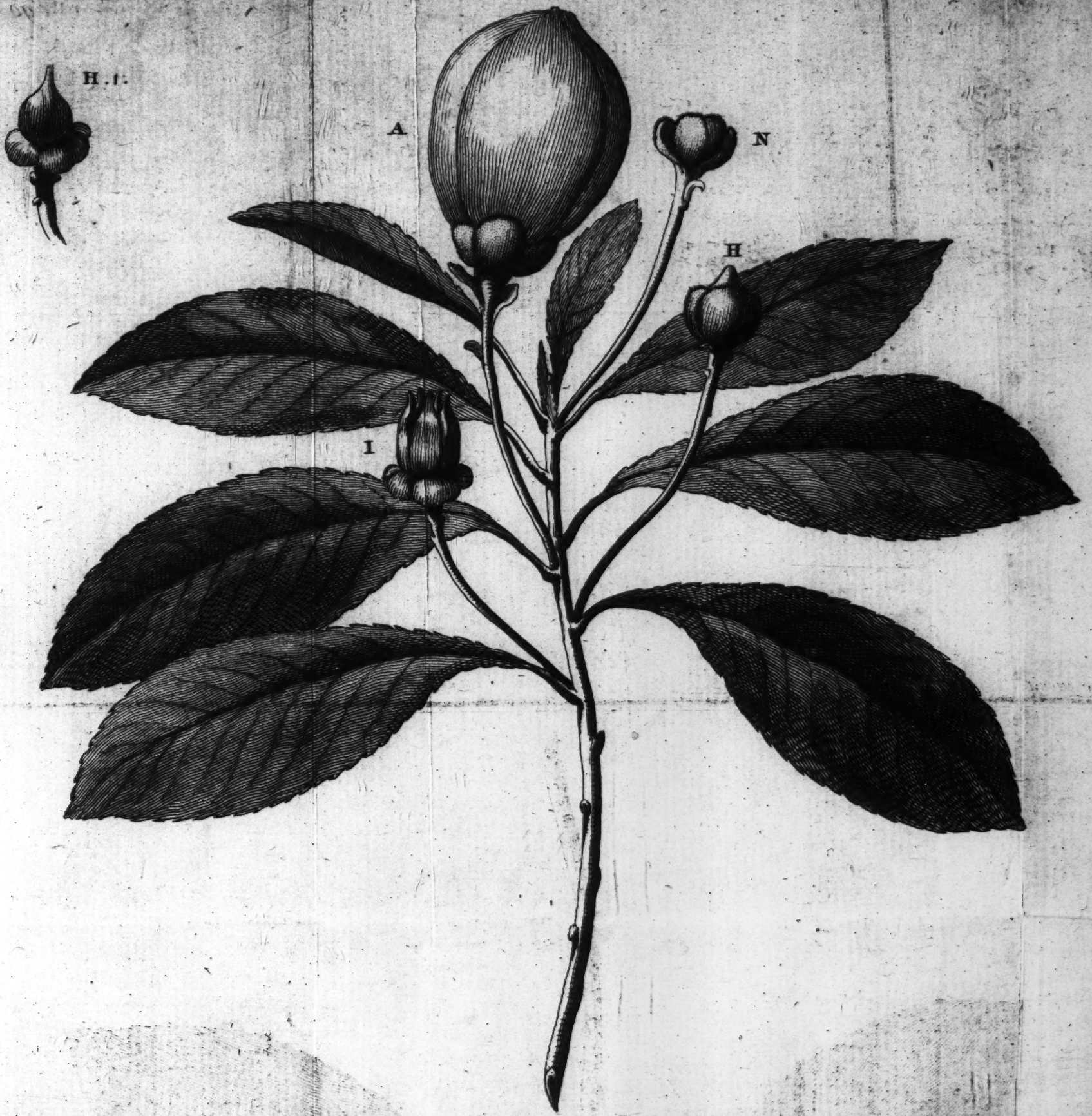
You must know then, that we have lately got into a method of cultivating that elegant evergreen-tree, called in South Carolina and the Floridas, the Loblolly-bay, or *Alcea Floridana*, &c. of Catesby's History of Carolina, vol. I. tab. 44. p. 44.

This tree has lately produced some well-blown flowers, in the curious botanic garden of Mr. Bewick, at Clapham, near London, who was so obliging to send them to me to examine their characters while fresh: I had very fortunately by me some dried specimens, which had been sent me from our mutual friend Dr. Alexander Garden, of Charles-town, South-Carolina. When I compared the fresh specimens with the dried ones, it soon became evident to me, why you judged it to be of the class of Polyadelphia, and placed it among the *Hypericums* with the trivial name of *Lasianthus*. For the stamina in the dried specimen appeared to be divided into five distinct phalanges, or bundles, with their filaments united together; but when you observe the figure and description of the new-blown flower, you will find that the filaments of the stamina being united at the bottom in a circle round the top of a funnel-shaped tube, will bring it to the class of Monadelphia, and probably next to the *Stewartia*. The only doubt I have in the description is, whether the style should be called one or five, the latter of which numbers you have adopted, and perhaps more properly, but in that I shall submit to your decision.

If, after you have seen it, you think, with many of your friends, both here and in America, that it is a new genus, I desire it may have a place among
your

Gordonia Lasianthus. *Vulgaris* Bay.





your genera, by the name of *Gordonia*, as a compliment to our worthy friend, that eminent gardener Mr. James Gordon, near Mile-end, to whom the science of botany is highly indebted, and whose merit is universally known for his great knowledge in the cultivation of exotic plants.

Mr. Miller, after telling us in his *Gardener's Dictionary* of the difficulty, or rather impossibility, to raise it, has placed it under the genus of *Hibiscus*; but as both the characters of that genus, in which he has followed you, as well as the face and habit of this plant, differ so much from an *Hibiscus*, I am convinced you will agree with me, that it does not belong to it.

Botanical Characters of the GORDONIA.

MONADELPHIA POLYANDRIA.

CALYX. The perianthium, or flower-cup, consists of five concave, roundish, downy, and stiff leaves, hairy on their edges, and, upon the falling off of the corolla, embracing the germen or seed bud very strongly: these remain till after the seed-vessel is ripe.

Obs. Upon the stalk under this flower-cup are four floral leaves, or bractææ, placed at unequal distances, of an oblong form, concave, and roundish at top, and truncated at bottom, where each seems to embrace a part of the stalk. These cover the flower, and its proper

per calyx, or flower cup, in its younger state, but as it grows up and expands, they begin to appear more distant from each other, and soon decay; otherwise they might be supposed to have the appearance of an exterior flower cup.

COROLLA. The flower consists of five large, fleshy, concave, inverted-oval petals, united at the narrow part of the base, forming as it were one petal; in the inside of this narrow part, or joining, is a funnel-shaped fleshy substance, like a nectarium; which is united to, and appears to be, a part of the petal; this surrounds the germen, or embryo seed-vessel. The upper part of this fleshy funnel-shaped tube is waved in such a manner, that the rising of each wave answers to the middle of each petal.

STAMINA (or male organs). The filaments of these are numerous, and linear shaped, they are inserted all round on the top or margin of this waved part of the funnel-shaped tube (not separated by distinct parcels, or united only in different bundles, as in the class of Polyadelphia) but equally distinct from each other, and connected together at the bottom by this fleshy tube. The antheræ, or summits, that contain the male-dust, are of an oval form and erect; they have a cell on each side full of farina, of a globular shape, when viewed by the microscope, different from the malvaceous tribe, which are full of points, and a common object in microscopes.

PISTIL-

PISTILLUM (or female organ). The germen, or seed-bud, is oval, and acuminate towards the top, where the style begins. The style is very short, and has five little ridges on the sides, as if five styles were united together. The tops of these supposed connected styles, end in five acute stigmata, or openings of the style, disposed horizontally in a radiated form, a little contorted towards the points. On the upper part of each of these is a longitudinal cavity, covered with down, and ending with each of them in a point.

PERICARPIUM. The capsule is eggshaped and acuminate at the top. It is of a woody consistence, and splits open at top when ripe into five valves, with five cells, or locuments.

SEMINA. The seeds are kidneyshaped, and winged obliquely on one side; there are two seeds in each cell.

EXPLANATION of the PLATE.

- A The flower of the *Gordonia Lasianthus*, unopened, with its calyx and bracteal leaves; from the curious garden of Benjamin Bewick, Esq; at Clapham.
- B The petals dropt off, these are united at their base; see B 1.
- C The petals, or corolla expanded, to shew the fleshy funnel-shaped tube, which unites the filaments together at their base.
- D The pistillum, whose germen, or seed-bud, has been surrounded by the base of the corolla at B 1.
- E The calyx, or flower-cup, consisting of five little stiff leaves.
- FFFF The four bracteal leaves.
- G The short style, and five stigmata.
- G 1 The stigmata magnified.
- H The conical germen, or seed bud, surrounded by the calyx.
- H 1 The seed vessel before it is ripe, with the calyx reflexed and withered.
- I The pericarpium, or seed-vessel, with its valves open.
- K K Two winged seeds.
- L Three of the petals cut off, to shew how they are united to the fleshy funnel-shaped tube, that supports the stamina.
- M M M The stamina with their filaments and summits a little magnified.
- N The bracteal leaves surrounding the flower-bud unopened.

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ridanum. Vulgo Starry Amseed Tree.



Basire del.

*The Copy of a Letter from John Ellis,
Esq; F. R. S. to Mr. William Aiton,
Botanic Gardener to her Royal Highness the
Princess Dowager of Wales, at Kew, on
a new Species of Illicium Linnæi, or Starry
Aniseed Tree, lately discovered in West
Florida.*

S I R,

YOUR extensive knowledge in botany, and great skill in the cultivation of the rarest exotic plants from all parts of the world in the celebrated botanic garden of her royal highness the princess dowager of Wales at Kew, will I hope, apologize for me to the Royal Society for the liberty I take in laying this letter, which I address to you, before them; especially as most of that illustrious body, who have made that agreeable science their study, are fully convinced of the truth of it, by often having the pleasure of seeing that most noble and truly princely collection, which is so happily placed under your care.

I confess myself particularly obliged by your skill and attention in raising not only the oak acorns, which were put into your hands by the Royal Society, after they had been preserved by me a whole
B season

season in wax ; but also for the care you have taken in raising one of the first tea-plants that has been produced from seed in this kingdom ; especially as it came to me in such a situation, that it could scarcely be expected to vegetate.

You have further shewed your skill in raising many of the starry aniseed trees from West Florida after they had been confined in a box under the ship's decks for near four months, a voyage near as long as from St. Helena, or even the Cape of Good Hope.

I shall now proceed to give you a history of this curious tree, both as a native of Japan, China, and other parts of the East, as well as both the Floridas in North America.

We meet with an account of the Eastern one, together with a figure of it, taken from Clusius, in Parkinson's Theatre of Plants, p. 1569. where he observes, that some branches of it, with the husks and seeds only, without leaves or blossoms, were brought into England by Sir Thomas Cavendish, in queen Elizabeth's time, from the Philippine Islands, where he met with it in his voyage round the world. These branches were given to Mr. Morgan, the queen's apothecary, and to Mr. James Garrat, of whom Clusius received them.

Monfieur Geoffroy, in his Materia Medica, translated in 1736 by Dr. G. Douglass, p. 322. calls it *Anisum Sinense*, *Semen Badian*, & *Fruetus Stellatus*, and says, it is highly esteemed in China, and all over the East. That it is used to cure any bad taste in the mouth, as a preservative against the effects of bad air, and also for the stone and gravel. The Indians likewise

likewise steep this fruit in water, and afterwards ferment the infusion, and thus make a vinous liquor: that the Dutch in the East-Indies, as well as the natives, mix this fruit with their tea and sherbet.

Kæmpfer in his *Amœnitates Exoticæ*, p. 880. calls it *Somo*, or *Skimmi*, and has given us a very good figure of a branch of it, with the leaves, flowers, and fruit. He found it in Japan, and says that the Japonese and Chinese esteem it a sacred tree, that they offer it to their idols, and burn the bark of it, as a perfume, on their altars; and lay the branches upon the graves of the dead, as an offering to the ghosts of their pious departed friends; and that the public watchmen use the powder of this aromatic bark strewed in small winding groves, or little channels, on some ashes in a box secured from the weather, for the following purpose. This powder being lighted at one end, burns slowly on, and being come to certain marked distances, they strike a bell, and by means of this time-keeper, proclaim the hours of the night to the public. And lastly, that it has the remarkable property of rendring the poison of the bladder-fish (*Tetraodon Ocellatus* of Linn. Syst. of Nature, p. 333.) more virulent, as many have experienced, that have used violent means to destroy themselves.

We are indebted for the first discovery of this curious American tree to a negro servant of William Clifton, Esq; chief justice of West Florida, who was sent to collect specimens of all the rarer plants by his master, at my request; and in April, 1765, he met with this curious tree growing in a swamp near the town of Pensacola; the specimens I received in July following.

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After this, in the latter end of January, 1766, Mr. John Bartram, the king's botanist for the Floridas, discovered it on the banks of the river St. John, in East Florida, as appears from his description of it, and the drawing of a seed-vessel, with some of the leaves, which he sent to our late worthy member Peter Collinson, Esq; who was so kind as to communicate them to me. Mr. Bartram's description of it, as it appears in his journal up the river St. John's, published by Dr. Stork, in his account of East Florida, is as follows:

"Near here my son found a lovely sweet tree,
 "with leaves like the sweet bay, which smelled like
 "sassafras, and produces a very strange kind of seed-
 "pop; but all the seed was shed, *the severe frost*
 "had not hurt it, some of them grew near twenty
 "feet high, a charming bright evergreen-aro-
 "matic."

This observation of Mr. Bartram, relating to its bearing a severe frost, may afford us a useful hint in the cultivation of this tree, especially as I am convinced, from repeated accounts of the weather in West Florida; that the frost is much more intense there, from whence those plants, which you now have in vigour, were brought, than in East-Florida; so that the experiment is well worth making with one of them, to see how far it will stand the severity of our winters. Should it succeed, it would be a very great acquisition to our gardeners, and be highly ornamental to our plantations of evergreens.

The medicinal properties of this tree are certainly worth enquiring into. The leaves afford a most agreeable bitter. A sprig of it set to putrify in a phial
 of

of water, the bark soon became full of a clear mucilage. The young blossoms put into water with a small quantity of oil of tartar *per deliquium* from a dark reddish color, became a light brown; but from the same proportion of oil of vitriol in water, they turned to a fine carmine color, which stained the paper of a fine red. This points out its astringent quality.

Before I come to the botanical characters of our Florida *Illicium*, I must observe, that it appears to me to be a *different species* from the oriental one.

The seed vessels from China, which are to be seen in collections of the *Materia Medica*, especially among foreigners, smell very disagreeably of aniseed: our Florida seed vessel is agreeably aromatic, as are the leaves and young branches. The flower, according to Kämpfer, is of a yellowish white, and looks at a distance like a *Narcissus*: ours is of a dark red color.

Kämpfer reckons the number of petals sixteen, and the rays or seed-vessels eight: the number of petals in ours is from twenty-one to twenty-seven, and the seed-vessels twelve or thirteen that ripen. In respect to the form and growth of the tree, they are much the same; for instance, they both grow to the size of a cherry-tree; their leaves are of an oblong oval shape, pointed at both ends, fleshy, with few veins, growing alternately, and in tufts at the ends of the small branches.

Dr. Linnæus, who takes his characters of the *Illicium Anisatum* (Gen. Plant. p. 244.) from Kämpfer, places it among the *Dodecandria Polygynia*. But I am persuaded you will agree with me, that from
the

the following characters, ours must be of the Polyandria Polygynia, and should stand next to the *Magnolia*.

Characters of the *ILLICIUM FLORIDANUM*,
Or FLORIDA STARRY ANISEED TREE.

CALYX. The perianthium, or flower-cup, consists commonly of five little membranaceous and colored leaves, that soon fall off; they are of a concave oblong oval form, pointed at the ends. Sometimes we meet with only four little leaves, sometimes six, in the flower-cup. Kæmpfer observed four in his.

COROLLA. The flower consists of many petals (from twenty-one to twenty-seven) which are lanceolated: these are of three sizes, and equal numbers in each circle, the outward ones are long (about an inch) concave, obtuse, and spreading open. The next are a little shorter and narrower; and the innermost are still shorter, much narrower, and very sharp pointed; but are not nectaria, as Dr. Linnæus supposes.

STAMINA. The filaments are many, (about thirty) very short and flat, placed over one another, surrounding the germina, or embryo seed vessels. These support as many antheræ, or summits, which are erect, oblong, and emarginated, or having a small indenture at top, with a cell on each side full of farina, of a globular form when they are magnified.

PISTIL-

PISTILLUM, or female organ. The germina, or embryo seed-vessels, are twenty, or more, in number, plac'd in a circular order above the receptacle of the flower; they are compressed, erect, and ending in so many sharp pointed styles, bending outwards at the top. The stigmata, or openings on the top of the styles, are downy, and placed lengthways along the upper part of each style.

PERICARPIMUM, or seed-vessel, consists of twelve, oftner thirteen, little pods, or capsules, that ripen. These are of a compressed oval shape, and a hard leather-like substance, with two valves to each, and are disposed edge-ways in a circular order, like so many rays of a star.

SEMINA. The seeds are smooth and shining, of an oval shape, a little compressed, and appear obliquely cut off at the base. There is one seed in each capsule. I am,

Sir,

Your affectionate friend,

John Ellis.

EXPLA-

EXPLANATION of the PLATE.

A A branch of the *Illicium Floridanum*, drawn from a plant in her Royal Highness the Princess Dowager of Wales's garden at Kew. The flowers and seed-vessels were drawn from specimens sent over from Pensacola by his honour lieutenant governor Durnford.

BB The front view of two flowers.

C The back view of a flower.

D The bud of a flower unopened.

EEE The pistilla, or female organs, being the embryo seed-vessel, separated from the stamina, or male organs.

F One single pistillum, with the germen, style, and stigma.

G The male and female organs, a little magnified.

H Two stamina, a little magnified.

I The farina sæcundans or male dust.

KK The calyx, with five little leaves.

LL The seed vessels, with thirteen capsules.

L l The seed-vessel of the Chinese *Illicium*, with only eight capsules. Kæmpfer reckons the same number in the Japonese *Illicium*, which he calls *Somo*, or *Skimmi*.

M Two of the seeds; they are called *Semen Badian*, and used in medicine in Germany, Denmark, and Sweden. The Dutch import large quantities of them from China.

T H E E N D.



